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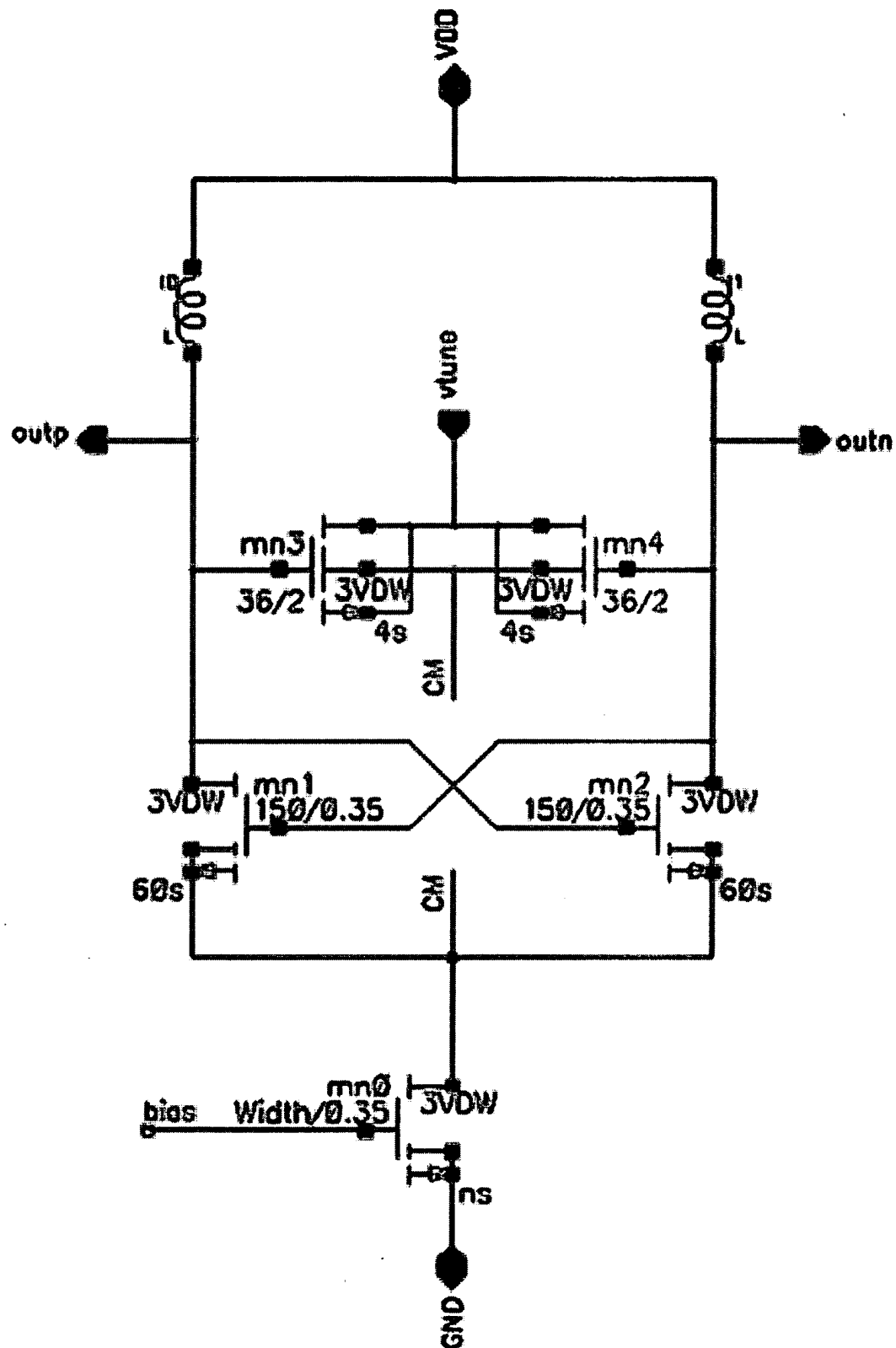


Figure 1

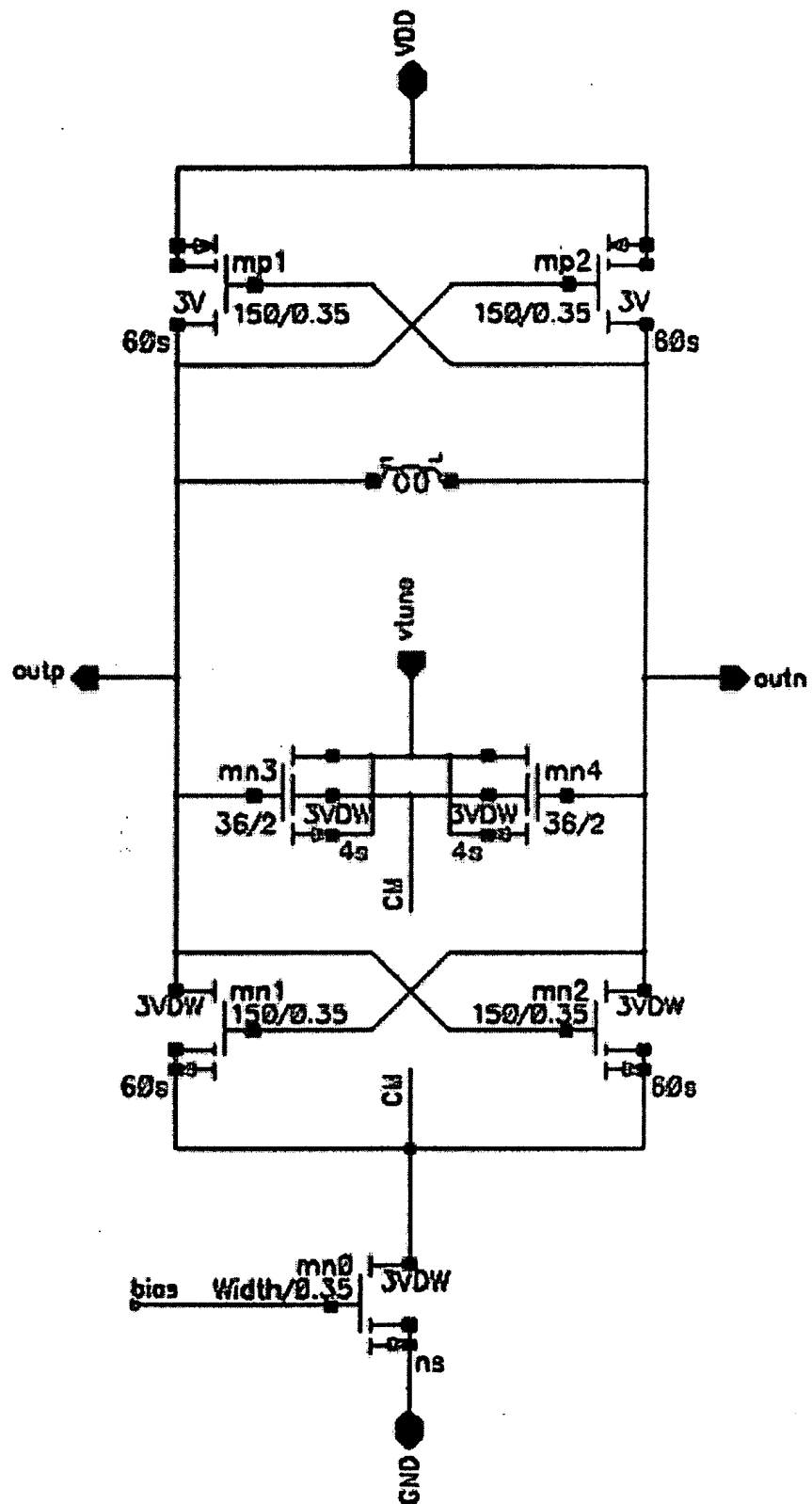


Figure 3

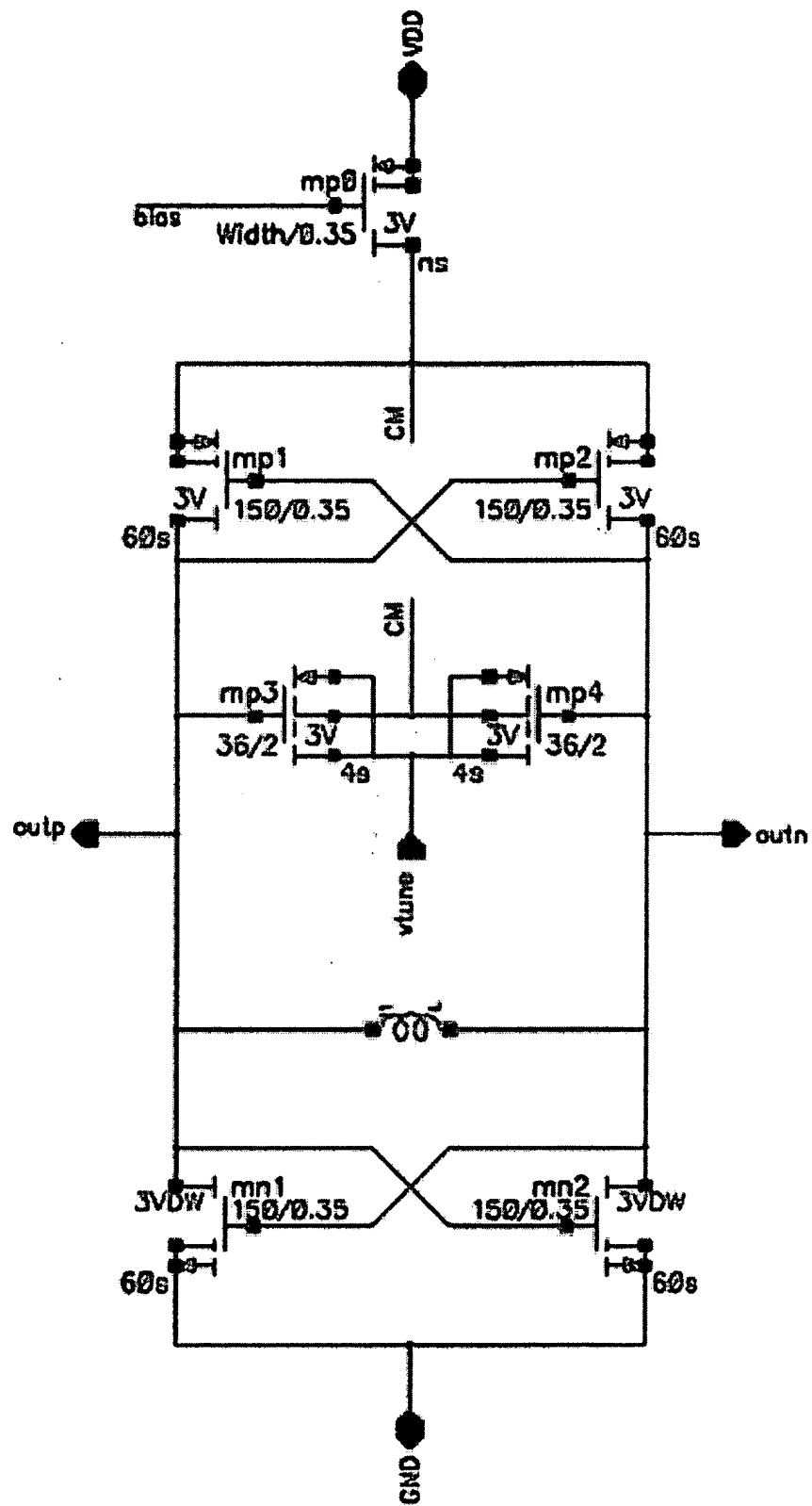


Figure 4

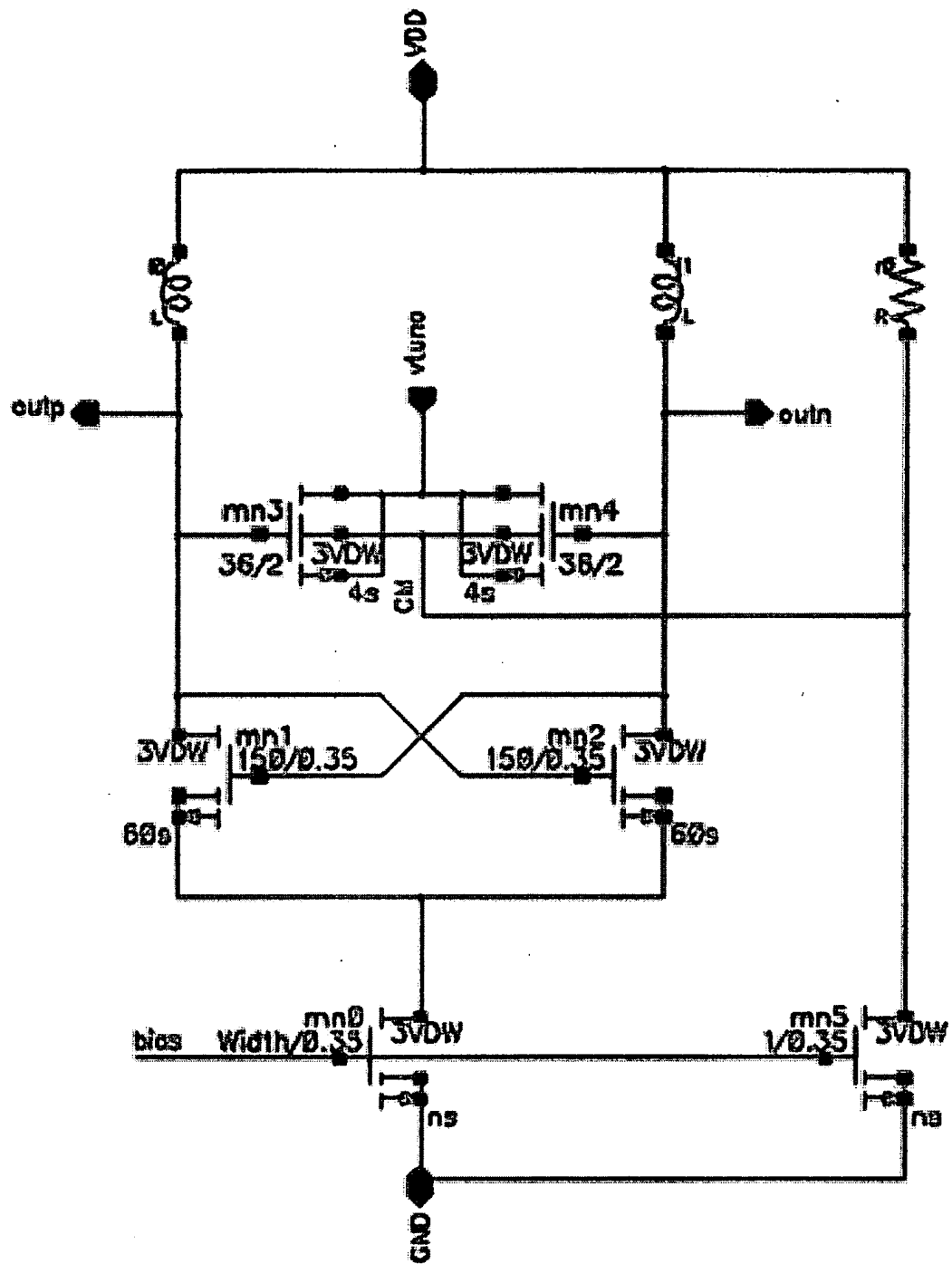


Figure 5

Calculate small swing tuning range, varactor Q, C(V) for D-S BG-23D, 1-3SDS
 36.00MHz, 2.0k Ω , 60, 1.150S varactor, ideal 0.16nH inductor tank
 Process: nominal Temp: 25.0 deg C
 Min Vtune: 1.00V P_o: 7.763 GHz VarQ: 372.8 Z_{tank}: 4739.49 Ohms -1603 MHz/V
 Max Vtune: -2.00V P_o: 10.463 GHz VarQ: 1970.4 Z_{tank}: 14099.77 Ohms 11 MHz/V
 Tuning Range: 2690.29 MHz 29.64 % about F_{avg}: 9.308 GHz GainRatio: -116.5 dB

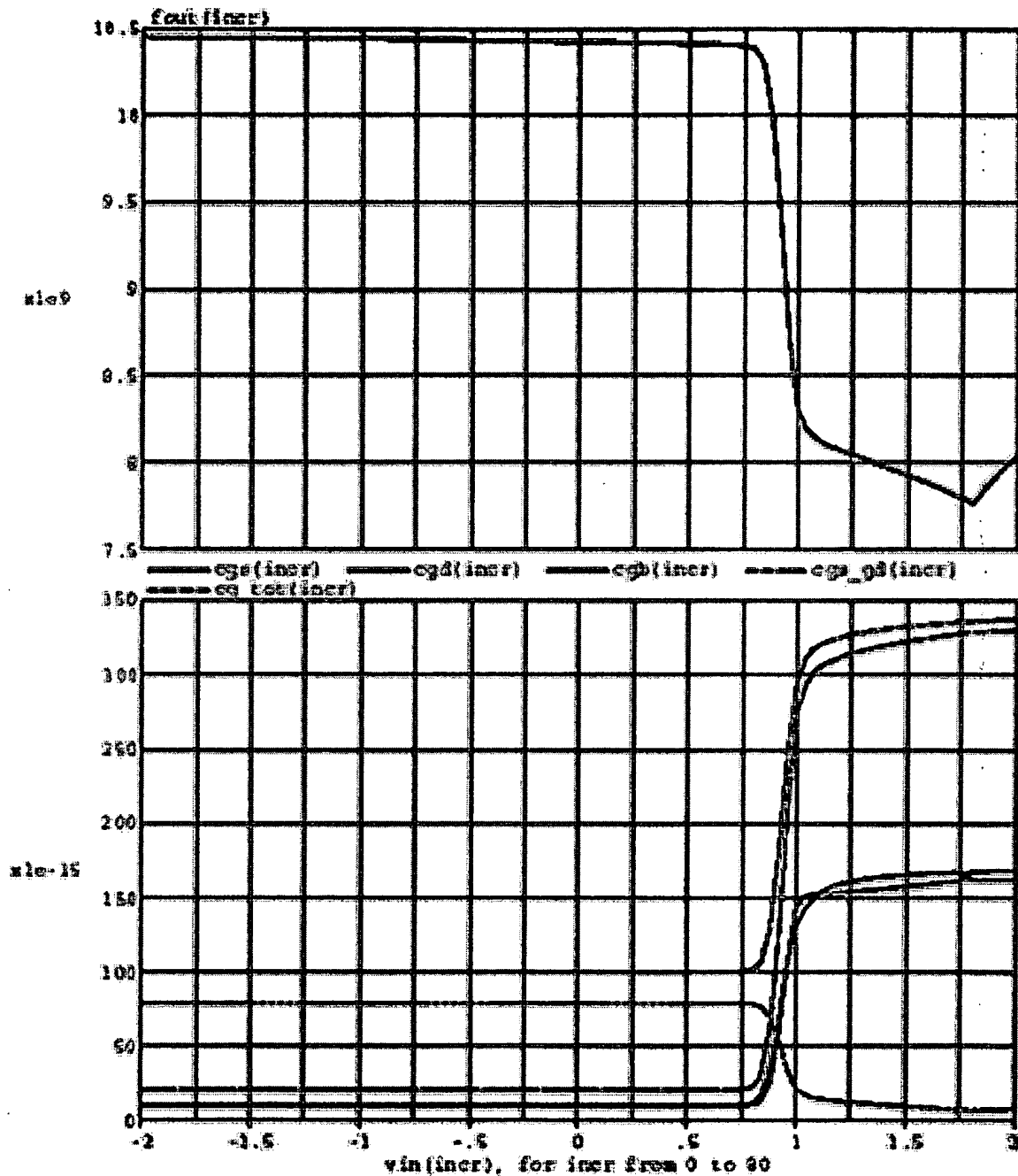


Figure 7

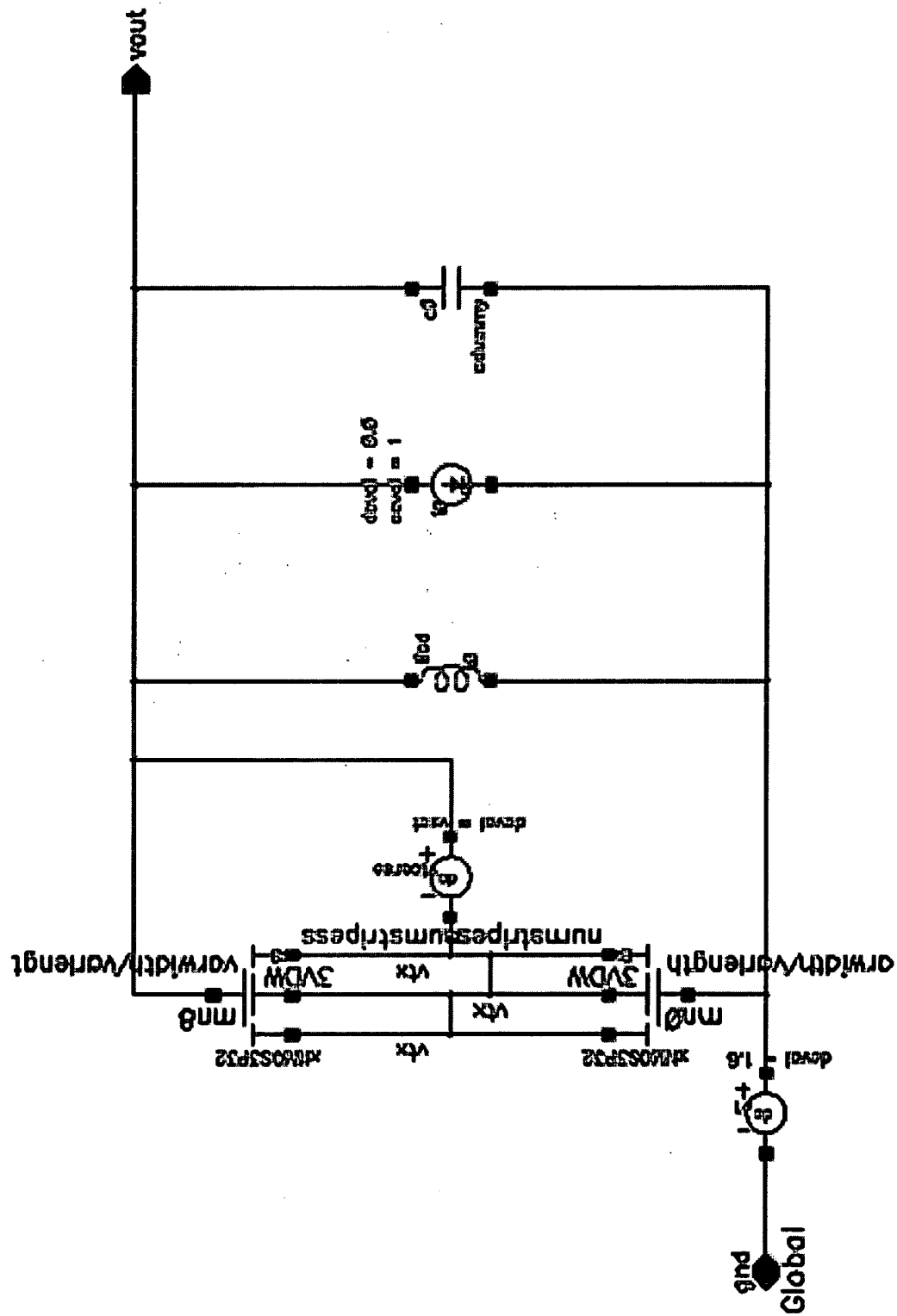


Figure 8

calculate small-signal tuning range, varactor Q, etc for DSB-PM mixer
 36.94GHz, 0.9L, 0.1 pF MOS varactor, ideal 0.16nH inductor tank
 Process: nominal Temp: 25.0 deg C
 Min Vtune: -2.00V P_0 : 9.169 GHz VarQ: 183.9 Z_{tank} : 1358.45 Ohms -116 MHz/V
 Max Vtune: 0.45V P_0 : 10.637 GHz VarQ: 758.6 Z_{tank} : 18138.23 Ohms 151 MHz/V
 Tuning Range: 1469.63 MHz 14.93 % about V_{avg} : 9.903 GHz GainRatio: -0.1:1

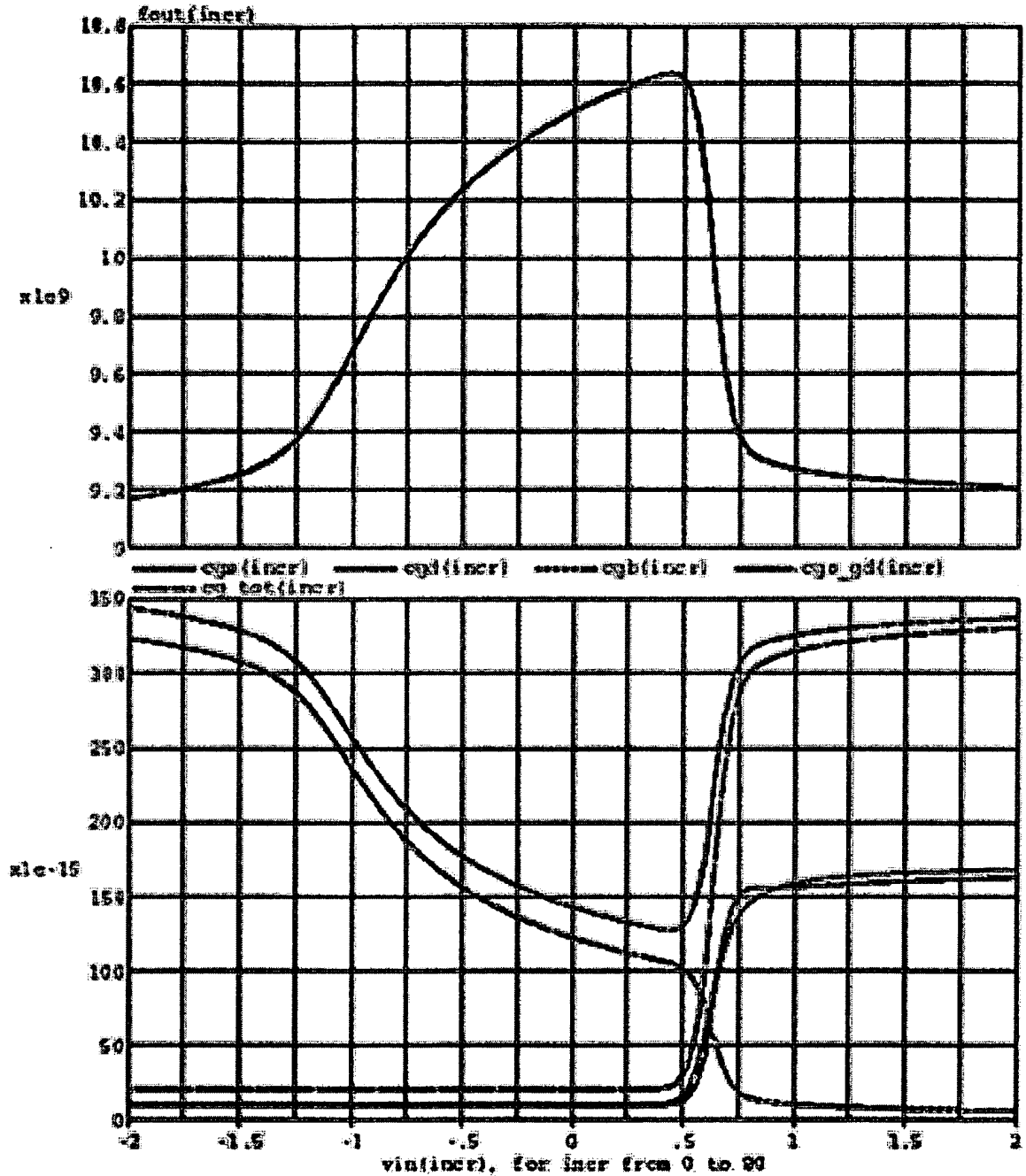


Figure 9

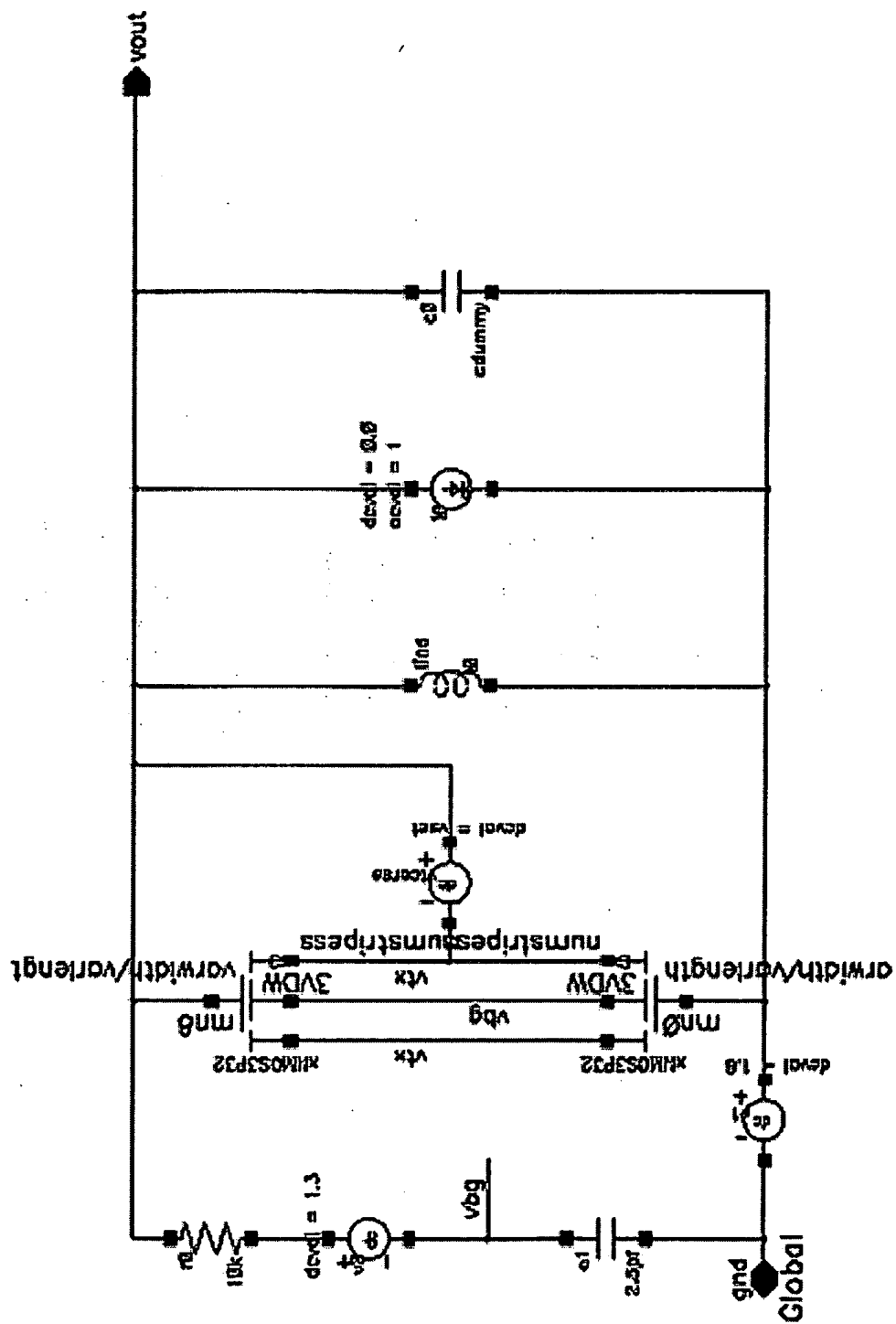


Figure 10

Calculate small signal tuning range, varactor Q, C(V) for D-S EO-0.5V 1200C
 36.8MHz 2.85L 40.1 100C varactor, ideal 0.36uH inductor test
 Process: nominal Temp: 25.0 deg C
 Min Vtune: 1.10V P_o: 7.926 GHz VarQ: 184.8 Z_{rank}: 2567.42 Ohms -3271 MHz/V
 Max Vtune: -2.00V P_o: 10.444 GHz VarQ: 199.6 Z_{rank}: 4463.47 Ohms 11 MHz/V
 Tuning Range: 2510.66 GHz 27.42 % about P_{avg}: 9.195 GHz GainRatio: -118.0:1

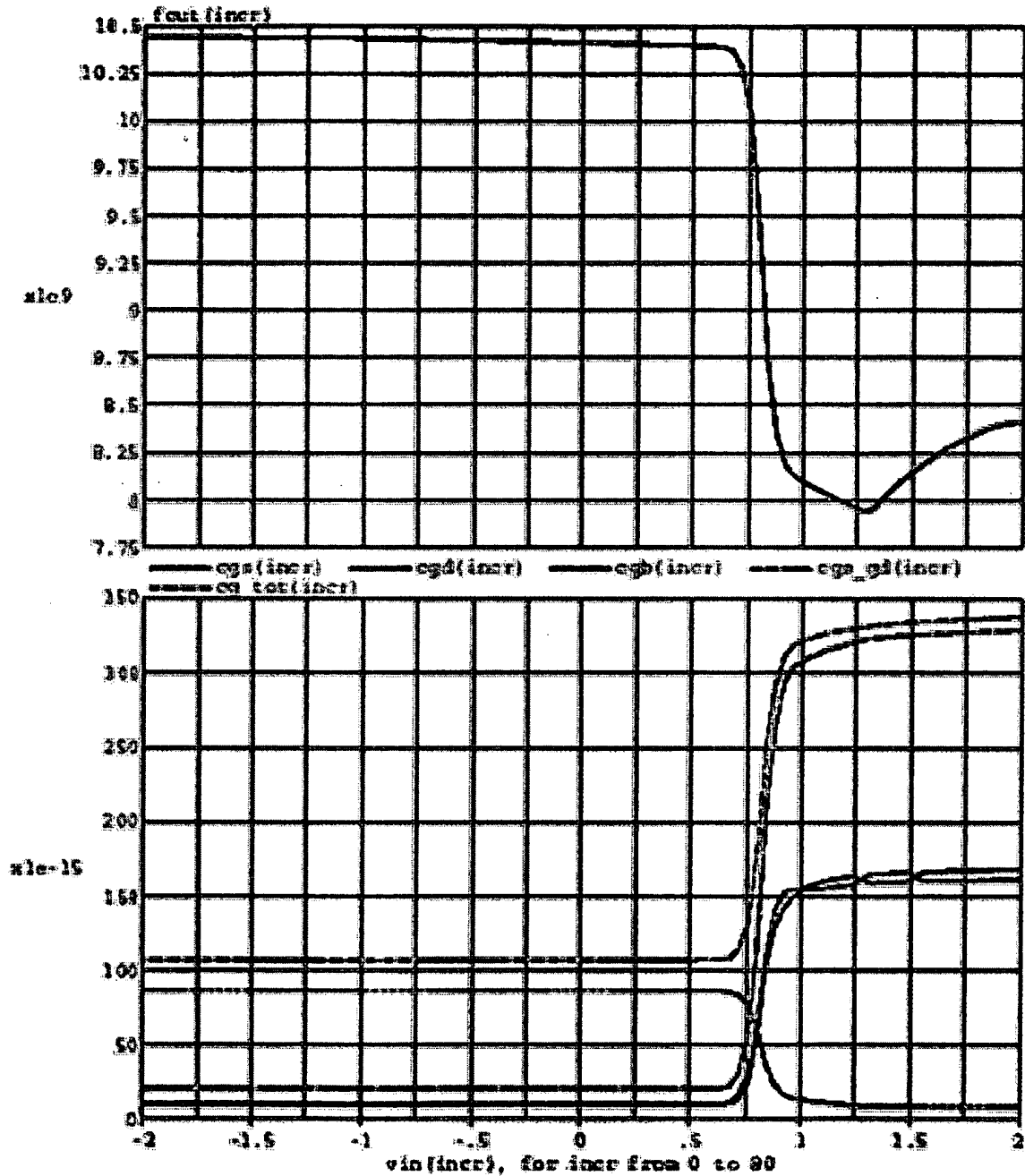


Figure 11

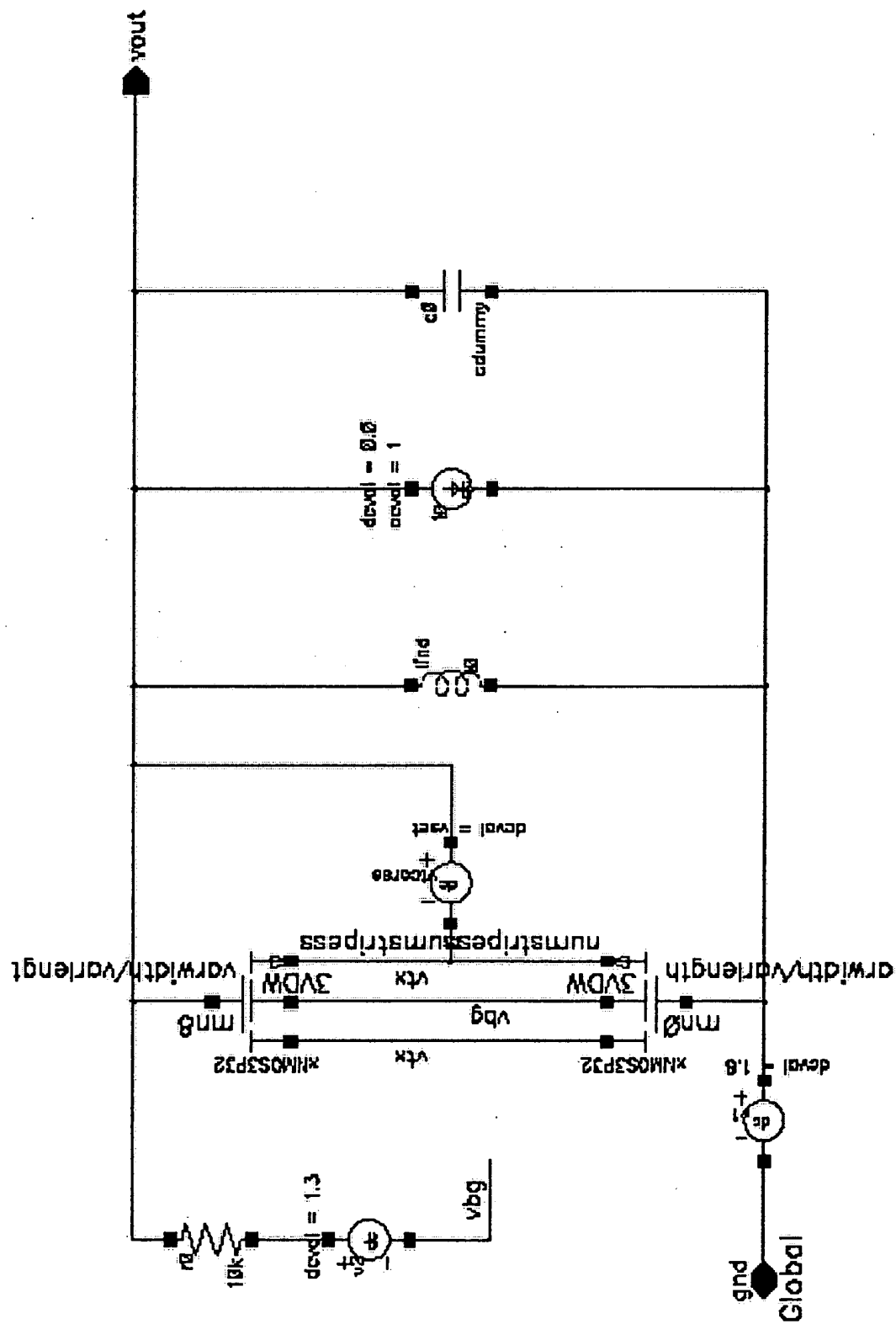


Figure 12

Calculate small signal tuning range, varactor Q, C(V) for D-S BIPOLAR, 1-1000S
 26.0GHz 2.00L, 40.1 MHz varactor, ideal 0.16nH inductor tank
 Process: nominal Temp: 25.0 deg C
 Min Vtune: 1.00V P_c : 9.211 GHz $VarQ$: 165.0 Z_{tank} : 2400.90 Ohms 24 MHz/V
 Max Vtune: -2.00V P_c : 11.124 GHz $VarQ$: 1006.6 Z_{tank} : 25247.86 Ohms 2 MHz/V
 Tuning Range: 1912.92 MHz 18.01 dB about f_{avg} : 10.167 GHz GainRatio: 16.2:1

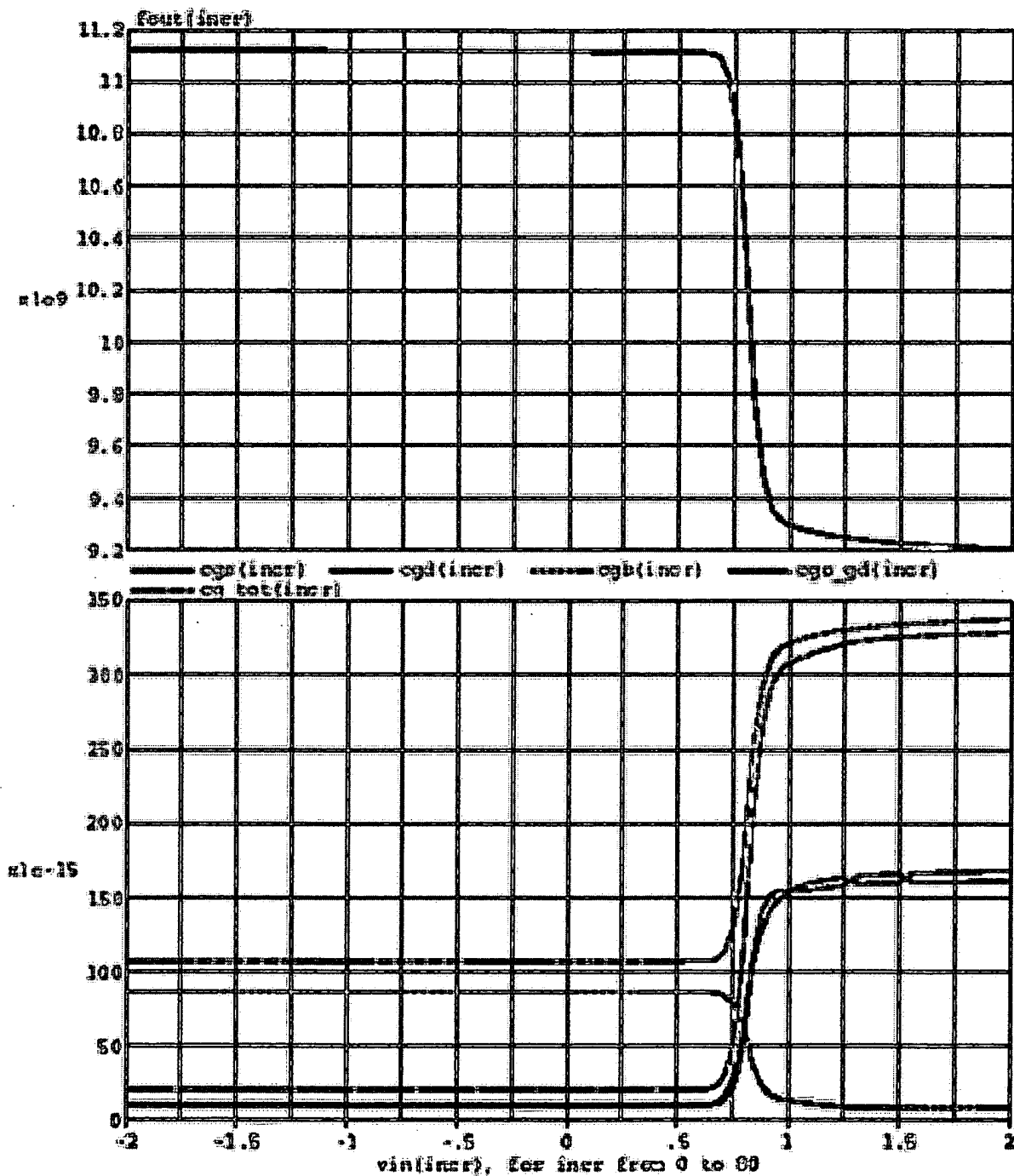


Figure 13

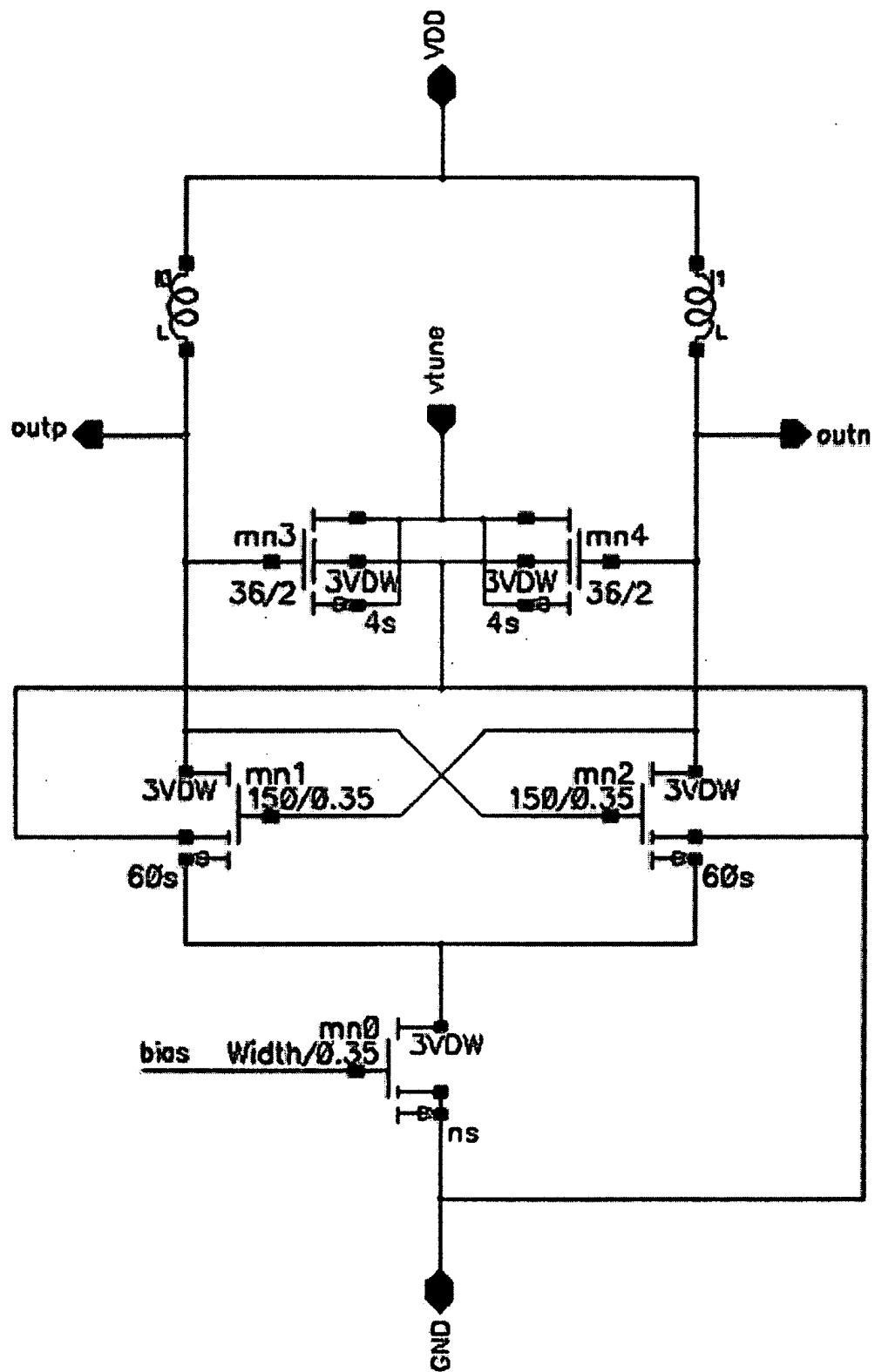


Figure 14

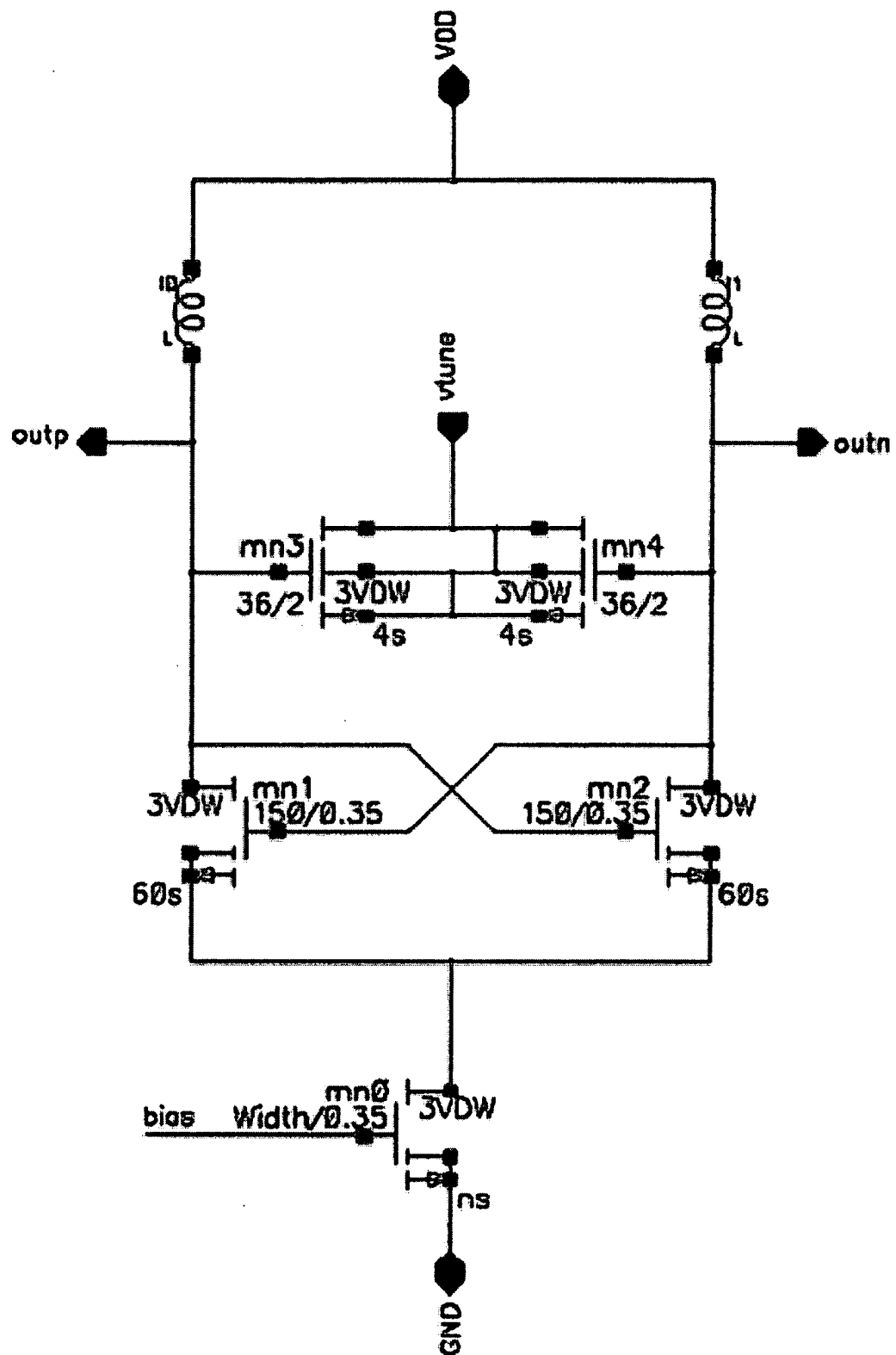


Figure 15

[illegible]

Figure 17

DVM: 4 bit group Vref: 0.8 Vref: 1.2 Vref: 1.2 VCore: 1.2 VCore: 1.2 VCore: 1.2 V
 120.8 MHz: 111.12a PMOS switch NMW cap: 1.5a, real 0.22mH inductor tank
 Process: nominal Temp: 65.0 deg C Vdd: 1.8 VCore: 0.9 VCore: 0.9
 Min Per: 0.025 GHz Max Per: 0.025 GHz
 Min Vpp: 2.715 V Max Vpp: 2.715 V
 BW: 0.00 GHz (0.040) 16b: 0.33 MHz CPU: 16b: 1.7 sec RMTCL: 1e-06

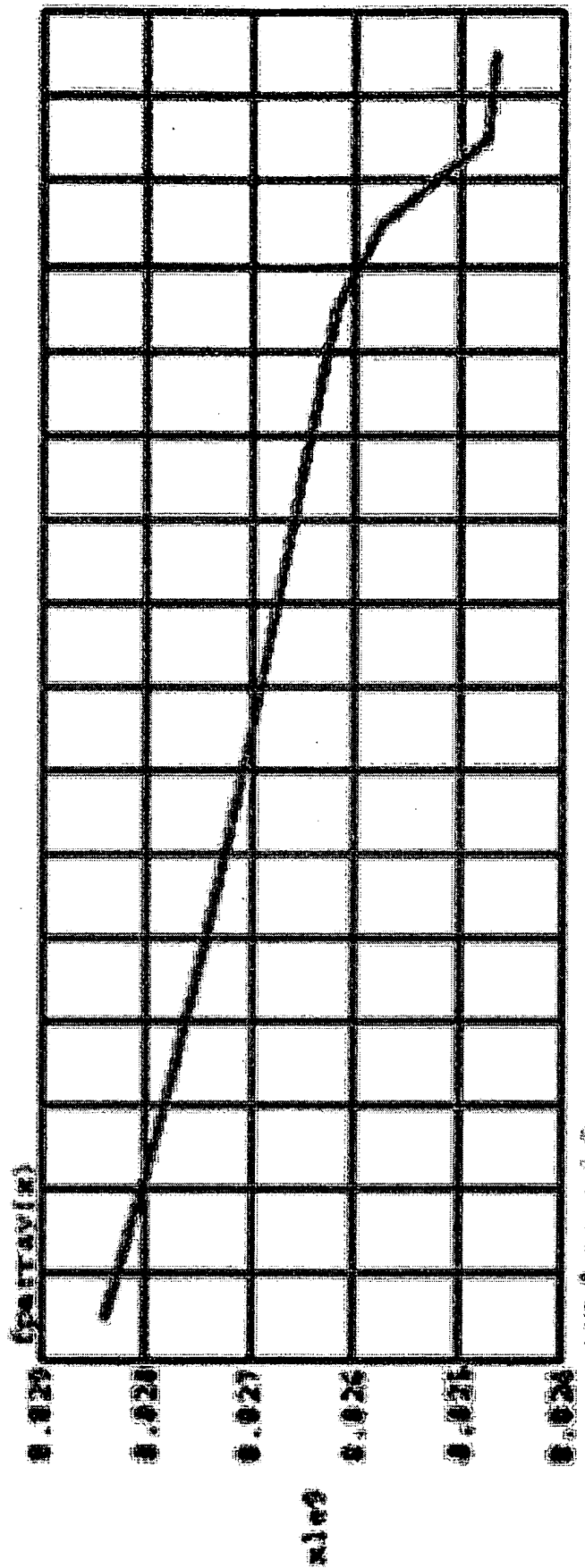


Figure 18

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DPOB: 4 bit wrap      Vref: 0.0 Vref: 1.2 Vcore1: 1.2 Vcore1: 0.0
L3: 0.000.111.12.    L3: 0.000.111.12.    L3: 0.000.111.12.
Process: nominal      Temp: 65.0 deg C      Vdd: 1.0 Vcore: 0.0 Vfine: 0.0
Min Fe: 0.018 GHz     Max Fe: 0.010 GHz
Min Vppd: 2.712 V      Max Vppd: 2.726 V
Ib: 0.11 miz cu.      Vfine: 0.0 Vfine: 0.0
RM: 0.00 GHz (0.021)  RM: 0.00 GHz (0.021)  RM: 0.00 GHz (0.021)

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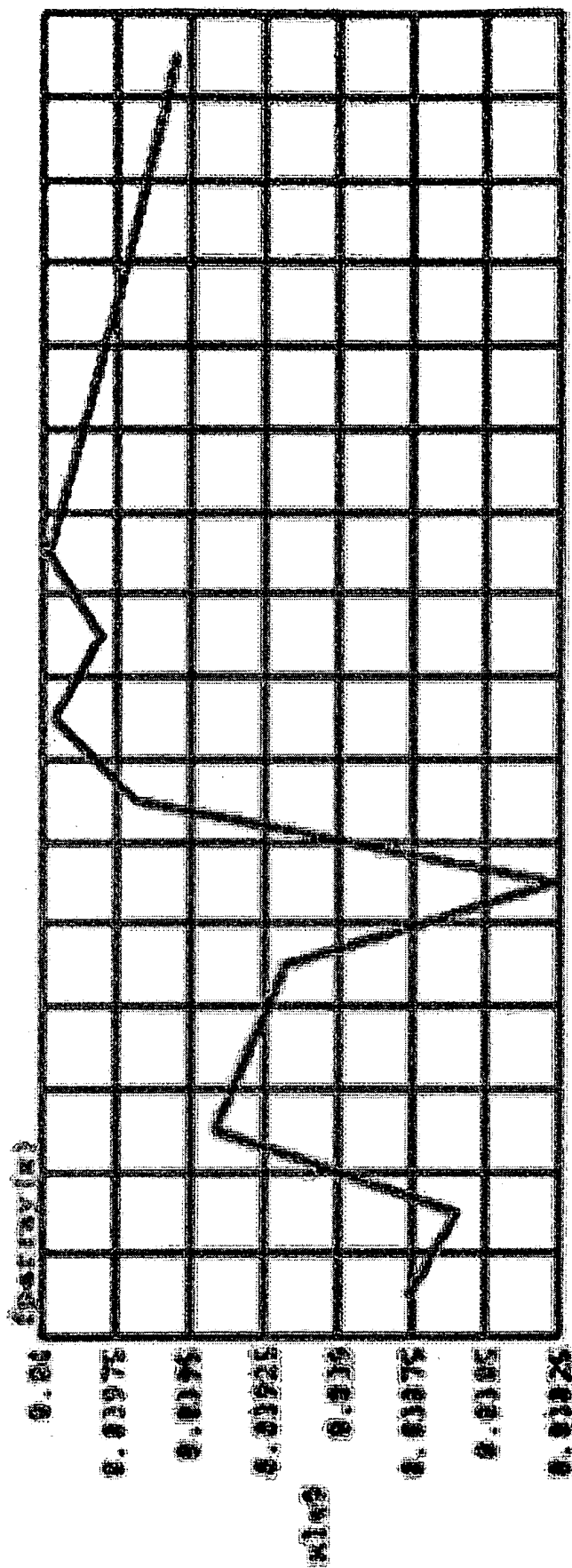


Figure 19

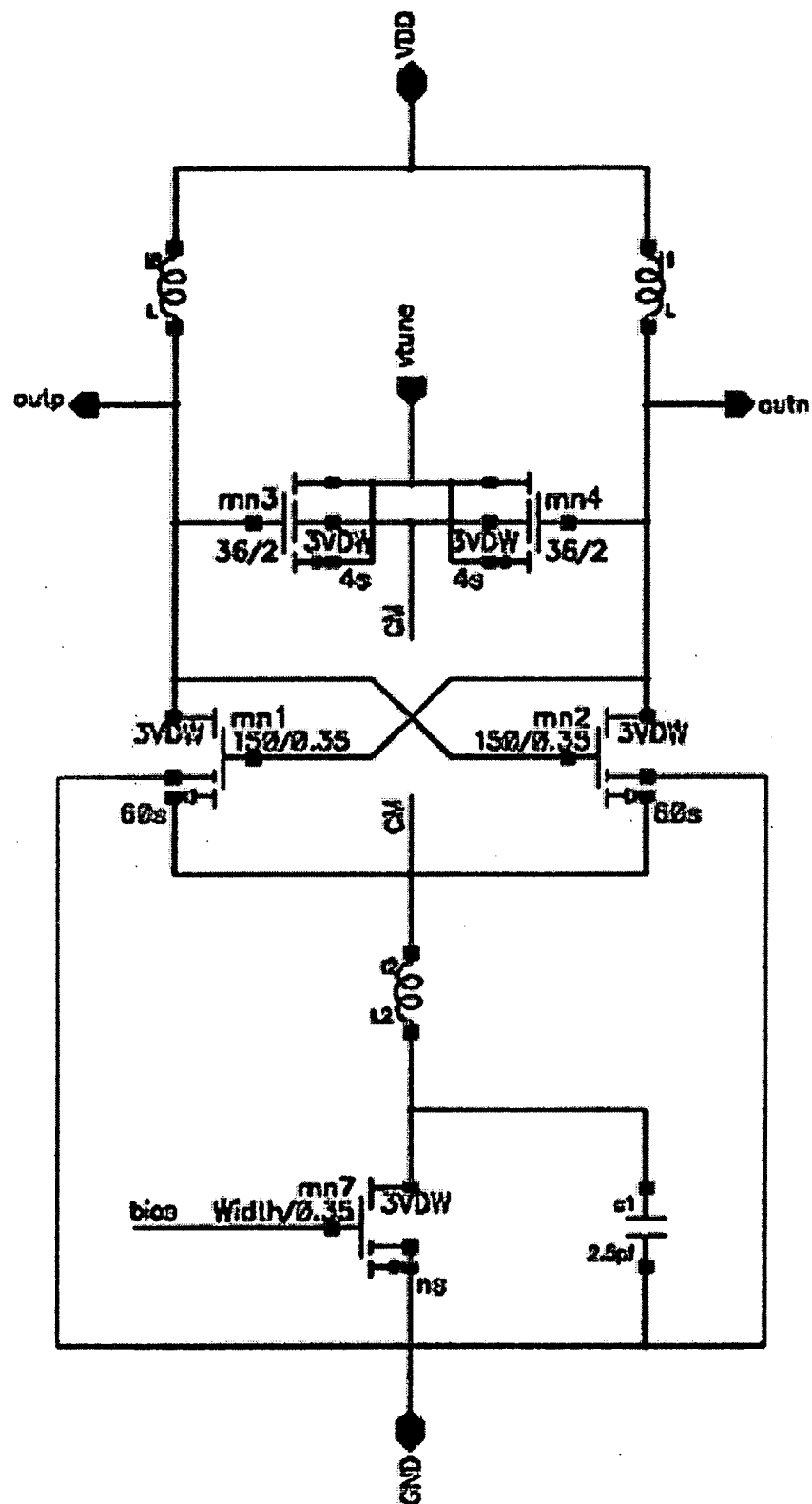


Figure 20

The graph shows a linear decrease in refractive index as concentration increases. The data points are approximately as follows:

Concentration (g/100 ml)	Refractive Index
0.00	1.005
0.02	1.004
0.04	1.003
0.06	1.002
0.08	1.001
0.10	1.000

Figure 21